In the claims.

The claims are amended as follows:

1-84. (cancelled)

85. (currently amended) A method of controlling a flow of frame based data comprising the steps of:

receiving frame based data at a ~~local area network frame based data channel interface~~ synchronous digital network multiplexer providing an interface between a wide area synchronous digital network and a local area network at a first rate of ~~reception~~ data transmission of said local area network, said data being for transmission over a said wide area synchronous digital network, said multiplexer configured to map frame based data into synchronous digital network virtual containers; and

at said multiplexer:

storing said data in a buffer;

monitoring an amount of said data stored in said buffer with respect to a data amount threshold level for said buffer;

determining that said amount is greater than said threshold level; and

in response to said step of determining, generating a signal for adapting said first rate to a second rate of ~~reception~~ data transmission of said local area network, said second rate being lower than said first rate; and

using said generated signal to adapt the data transmission rate of the local area network from the first rate to the second rate.

86. (previously presented) A method according to claim 85, wherein said synchronous digital network comprises a synchronous digital hierarchy (SDH) network.

87. (previously presented) A method according to claim 85, wherein said synchronous digital network comprises a SONET network.

88. (previously presented) A method according to claim 85, wherein said data is received from an Ethernet network.

89. (previously presented) A method according to claim 85, wherein said data is Ethernet data.

90. (previously presented) A method according to claim 85, wherein said signal comprises a pause frame.

91. (previously presented) A method according to claim 90, wherein said data is received from an Ethernet network and said pause frame is an Ethernet pause frame.

92. (previously presented) A method according to claim 91, wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network.

93. (previously presented) A method according to claim 85, wherein said buffer comprises data storage locations for storing at least one data frame.

94. (previously presented) A method according to claim 85, wherein said buffer has a size equal to a number of maximum length Ethernet frames, said number being selectable from a set comprising 4 and 6.

95. (previously presented) A method according to claim 85, wherein said buffer comprises, above said threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames.

96. (previously presented) A method according to claim 85, wherein said buffer is configured as a first in first out (FIFO) queue.

97. (previously presented) A method according to claim 85, wherein said buffer is configured as a circular buffer.

98. (previously presented) A method according to claim 85, comprising sending said generated signal over said interface.

99. (previously presented) A method according to claim 98, wherein said step of sending is performed substantially immediately after said step of determining.

100. (previously presented) A method according to claim 98, wherein said step of sending is performed upon completing transmission of a data frame currently being transmitted at said interface.

101. (currently amended) A method of controlling a flow of frame based data comprising the steps of:

receiving frame based data transmitted over a wide area synchronous digital network at a synchronous digital network multiplexer providing an interface between said wide area synchronous digital network and a first local area network, said multiplexer configured to map frame based data into synchronous digital network virtual containers, said frame based data being received at a first rate of ~~reception~~ data transmission of a second, remote local area network, said data being for transmission over a said first local area network ~~frame based data channel interface~~; and

at said multiplexer:

storing said data in a buffer;

monitoring an amount of said data stored in said buffer with respect to a data amount threshold level for said buffer;

determining that said amount is greater than said threshold level; and

in response to said step of determining, generating a signal for adapting said first rate to a second rate of ~~reception~~ data transmission of said second local area network, said second rate being lower than said first rate; and

using said generated signal to adapt the data transmission rate of the second local area network from the first rate to the second rate.

102. (previously presented) A method according to claim 101, wherein said synchronous digital network comprises a synchronous digital hierarchy (SDH) network.

103. (previously presented) A method according to claim 101, wherein said synchronous digital network comprises a SONET network.

104. (previously presented) A method according to claim 101, wherein said data is for transmission to an Ethernet network.

105. (previously presented) A method according to claim 101, wherein said data is Ethernet data.

106. (previously presented) A method according to claim 101, wherein said signal comprises a pause frame.

107. (previously presented) A method according to claim 106, wherein said data is transmitted from an Ethernet network and said pause frame is an Ethernet pause frame.

108. (previously presented) A method according to claim 107, wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network.

109. (previously presented) A method according to claim 101, wherein said buffer comprises data storage locations for storing at least one data frame.

110. (previously presented) A method according to claim 101, wherein said buffer has a size equal to a number of maximum length Ethernet frames, said number being selectable from a set comprising 4 and 6.

111. (previously presented) A method according to claim 101, wherein said buffer comprises, above said threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames.

112. (previously presented) A method according to claim 101, wherein said buffer is configured as a first in first out (FIFO) queue.

113. (previously presented) A method according to claim 101, wherein said buffer is configured as a circular buffer.

114. (previously presented) A method according to claim 101, comprising sending said generated signal over said synchronous digital network.

115. (previously presented) A method according to claim 114, wherein said step of sending is performed substantially immediately after said step of determining.

116. (previously presented) A method according to claim 114, wherein said step of sending is performed upon completing transmission of a data frame currently being transmitted over said synchronous digital network.

117. (currently amended) Apparatus for controlling a flow of frame based data comprising:

~~an input~~ a synchronous digital network multiplexer for receiving frame based data at ~~a local area network frame based data channel interface~~ at a first rate of ~~reception~~ data transmission of a local area network, said data being for transmission over a wide area synchronous digital network, said multiplexer providing an interface between said wide area synchronous digital network and said local area network, said multiplexer configured to map frame based data into synchronous digital network virtual containers;

said multiplexer having:

a buffer for storing said data;

a monitor for monitoring an amount of said data stored in said buffer with respect to a data amount threshold level for said buffer;

a determiner for determining that said amount is greater than said threshold level; and

a signal generator generating, in response to said determiner, a signal for adapting said first rate to a second rate of ~~reception~~ data transmission of said local area network, said second rate being lower than said first rate; and

an output for using said generated signal to adapt the data transmission rate of the local area network from the first rate to the second rate.

118. (previously presented) Apparatus according to claim 117, wherein said synchronous digital network comprises a synchronous digital hierarchy (SDH) network.

119. (previously presented) Apparatus according to claim 117, wherein said synchronous digital network comprises a SONET network.

120. (previously presented) Apparatus according to claim 117, wherein said data is received from an Ethernet network.

121. (previously presented) Apparatus according to claim 117, wherein said data is Ethernet data.

122. (previously presented) Apparatus according to claim 117, wherein said signal comprises a pause frame.

123. (previously presented) Apparatus according to claim 122, wherein said data is received from an Ethernet network and said pause frame is an Ethernet pause frame.

124. (previously presented) Apparatus according to claim 123, wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network.

125. (previously presented) Apparatus according to claim 117, wherein said buffer comprises data storage locations for storing at least one data frame.

126. (previously presented) Apparatus according to claim 117, wherein said buffer has a size equal to a number of maximum length Ethernet frames, said number being selectable from a set comprising 4 and 6.

127. (previously presented) Apparatus according to claim 117, wherein said buffer comprises, above said threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames.

128. (previously presented) Apparatus according to claim 117, wherein said buffer is configured as a first in first out (FIFO) queue.

129. (previously presented) Apparatus according to claim 117, wherein said buffer is configured as a circular buffer.

130. (previously presented) Apparatus according to claim 117, comprising an output for sending said generated signal over said interface.

131. (currently amended) Apparatus for controlling a flow of frame based data comprising:

~~an input~~ a synchronous digital network multiplexer for receiving frame based data transmitted over a wide area synchronous digital network at a first rate of ~~reception~~ data transmission of a second, remote local area network, said data being for transmission over a first local area network ~~frame based data channel interface~~, said multiplexer providing an interface between said wide area synchronous digital network and said first local area network, said multiplexer configured to map frame based data into synchronous digital network virtual containers;

said multiplexer having:

a buffer for storing said data;

a monitor for monitoring an amount of said data stored in said buffer with respect to a data amount threshold level for said buffer;

a determiner for determining that said amount is greater than said threshold level; and

a generator for generating, in response to said determiner, a signal for adapting said first rate to a second rate of ~~reception~~ data transmission of said second local area network, said second rate being lower than said first rate; and

an output for using said generated signal to adapt the data transmission rate of the second local area network from the first rate to the second rate.

132. (previously presented) Apparatus according to claim 131, wherein said synchronous digital network comprises a synchronous digital hierarchy (SDH) network.

133. (previously presented) Apparatus according to claim 131, wherein said synchronous digital network comprises a SONET network.

134. (previously presented) Apparatus according to claim 131, wherein said data is for transmission to an Ethernet network.

135. (previously presented) Apparatus according to claim 131, wherein said data is Ethernet data.

136. (previously presented) Apparatus according to claim 131, wherein said signal comprises a pause frame.

137. (previously presented) Apparatus according to claim 136, wherein said data is transmitted from an Ethernet network and said pause frame is an Ethernet pause frame.

138. (previously presented) Apparatus according to claim 137, wherein said pause frame specifies a time interval for inhibiting further transmissions from said Ethernet network.

139. (previously presented) Apparatus according to claim 131, wherein said buffer comprises data storage locations for storing at least one data frame.

140. (previously presented) Apparatus according to claim 131, wherein said buffer has a size equal to a number of maximum length Ethernet frames, said number being selectable from a set comprising 4 and 6.

141. (previously presented) Apparatus according to claim 131, wherein said buffer comprises, above said threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames.

142. (previously presented) Apparatus according to claim 131, wherein said buffer is configured as a first in first out (FIFO) queue.

143. (previously presented) Apparatus according to claim 131, wherein said buffer is configured as a circular buffer.

144. (previously presented) Apparatus according to claim 131, comprising an output for sending said generated signal over said synchronous digital network.